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STATISTICAL BULLETIN

METROPOLITAN LIFE INSURANCE COMPANY

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Fatal Diving Injuries

BROKEN necks, fractured skulls, and other serious injuries received in diving accidents result in at least 200 deaths in the United States each year. This figure takes no account of those divers whose deaths are ascribed to asphyxiation by drowning, uncomplicated by other injuries. Very probably many deaths so classified actually result from spinal or other injuries which are not detected or are not reported on the death certificate. The figure of 200 deaths, therefore, must be considered minimal. When account is taken also of the fact that these diving accidents are concentrated in the three-month period June through August, the figure takes on added significance and it becomes more apparent that the chances of sustaining a fatal injury while diving are far from negligible.

A dive is in effect a voluntary fall. It might be supposed that when one decided to fall head first from the edge of even a low diving platform, he would first assure himself of the absence of any special hazard, but as the figure on fatalities we have cited indicates, many plunge heedlessly into the water. This conclusion is supported by an analysis of the mortality records of 100 Industrial policyholders of the Metropolitan Life Insurance Company who were killed in diving accidents. By far the large majority—68 percent—lost their lives mainly because they failed to investigate the depth of the water or to estimate correctly the depth of water needed for a safe dive before they plunged. They struck bottom with considerable force and, more often than not in these cases, the impact resulted in a broken neck.

The records of insured persons show that frequently the deceased had not before swum in the body of water in which he lost his life, and was injured in his first dive. But even those who knew something about the waters in which they were swimming got into trouble, suggesting that in diving, nothing should be taken for granted. One man, for example, plunged into a pool which at the time was only partly filled. Some victims forgot that what was a safe diving area at high tide was far from safe at low tide. Others diving from boats failed to observe that they had drifted into shallow water.

Striking against submerged objects in water which the diver failed to examine before diving was the next most important cause of injury, 18 of the 100 deaths of policyholders being in this category. Fourteen of the victims hit their heads against rocks. One person collided with an oil drum and another with a tree stump.

The circumstances surrounding the remaining 14 fatalities reveal several other unsafe practices of divers: Two persons diving simultaneously and striking their heads under water; striking a previous diver who has not been given enough time to emerge; falling flat after a high dive; diving too close to a dock guard at a pier and striking it; diving off a swing, hung from a tree over the water, and misjudging the distance; falling beyond the deep part of the stream into muck; swinging from a diving board, miscalculating the swing, and striking the head against the concrete side of a swimming pool; diving from the back of a friend into breakers.

The main inferences to be drawn from this brief analysis are quite obvious: No dive should be undertaken before it is determined that there is enough water for the kind of dive to be attempted, and that the bottom is free from projecting rocks or other submerged objects near the surface of the water.

Geographic Distribution of Declines in Infant Mortality

AT NO age is human life so helpless against its environment as in infancy. Without the care of the mother, or some other interested person, the newly born baby would have no chance of surviving for any length of time. But though the maternal instinct to care for the infant awakens spontaneously, childbirth, by itself, does not bring to the mother the requisite knowledge that will give the infant the best possible chance to survive its hazardous first year of life. This knowledge the mother can gain only from sources available to her from public or private agencies that make it their business to disseminate the latest advances in prenatal and neonatal care.

It is a fair presumption that variations in infant mortality in different parts of the country reflect the extent to which information regarding prenatal and neonatal care is dispersed among the people at large. In so far as the infant mortality rates may be used as an index of this dispersal, they indicate a very uneven availability of such information throughout the length and breadth of the country. Thus, it will be observed, for example, in the table on page 4 that infant mortality (deaths under 1 year of age per 1,000 live births) in New Mexico, the State with the poorest record, is fully three times as great as that in Oregon, the State with the best record. Whereas there

were 128.4 infant deaths per 1,000 live births in New Mexico during the period from 1933 to 1937, the corresponding figure for Oregon was only 41.4. Aside from New Mexico, the only other State where more than one out of every 10 newly born babies died in their first year of life was Arizona, with an infant mortality rate of 113.4 per 1,000.

In general, infant mortality is high in the South as compared to the country as a whole. Thus, of the 21 States which experienced, from 1933 to 1937, an infant mortality rate greater than 57.0 per 1,000 live births—the average for the country as a whole—all but four were within the Southern tier of the country. In the Southern belt, only Arkansas, with a rate of 52.2 deaths under 1 year of age per 1,000 live births, experienced a better-than-average infant mortality rate. Five States—Washington and Oregon on the West Coast, New Jersey and Connecticut on the East Coast, and Nebraska in the Midwest—were favored with infant mortality rates below 45 per 1,000 during 1933 to 1937. There were no States within this low range in the earlier period, 1928 to 1932.

Measured in terms of percentages, Pennsylvania, New Jersey, Connecticut, and Rhode Island achieved the greatest improvement in infant mortality over a 10-year period of comparison; in each of these States the decline from the period 1928 to 1932 to the period 1933 to 1937 was over 20 percent. On the other hand five States—all in the South—recorded improvements of 5 percent or less. Florida is lowest on the list, with a reduction of only 2.8 percent in its infant mortality.

From this brief survey it is obvious that the present situation in regard to infant mortality in the United States is far from satisfactory. In the first place, many of our States are still experiencing much higher infant mortality rates than others. But even Oregon, the State with the best record, is fully 30 percent higher in its infant mortality rate than New Zealand, which, during the period from 1933 to 1937, had a rate of only 31.6 per 1,000. Secondly, there has been a wide variation in the degree of improvement in infant mortality from State to State in recent years. Generally speaking, the States with the highest rates, which had the greatest need and also the greatest opportunity for improvement, have nevertheless *not* shown the greatest improvements.

Clearly our practice in the preservation of infant life lags much behind our knowledge of the requisite ways and means. An adequate program of prenatal and neonatal care in all sections of the country would undoubtedly reduce infant mortality generally to levels now found only in the best regulated communities. On the basis of our present knowledge, if enthusiastically and competently applied, an infant mortality rate of 25 per 1,000 could be achieved.

Deaths Under 1 Year of Age per 1,000 Live Births in the United States and in Each State in the Periods 1928 to 1932 and 1933 to 1937, Together with the Percent Decrease from the First to the Second Periods

State	Deaths Under 1 Year per 1,000 Live Births		Percent Decline from 1928–32 to 1933–37	State	Deaths Under 1 Year per 1,000 Live Births		Percent Decline from 1928–32 to 1933–37
	1933–1937	1928–1932			1933–1937	1928–1932	
United States†	57.0	64.4	11.5				
Alabama	65.2	68.6	5.0	Nebraska	44.2	49.2	10.2
Arizona	113.4	119.6	5.2	Nevada	62.6	69.8‡	10.3
Arkansas	52.2	54.0	3.3	New Hampshire	53.0	62.8	15.6
California	52.6	58.8	10.5	New Jersey	44.8	57.6	22.2
Colorado	72.8	85.2	14.6	New Mexico	128.4	135.8‡	5.4
Connecticut	44.4	56.4	21.3	New York	49.2	59.0	16.6
Delaware	63.8	77.2	17.4	North Carolina	69.0	76.8	10.2
Florida	62.4	64.2	2.8	North Dakota	55.6	60.4	7.9
Georgia	69.2	73.4	5.7	Ohio	51.4	62.8	18.2
Idaho	48.6	54.0	10.0	Oklahoma	57.8	60.2	4.0
Illinois	47.6	58.6	18.8	Oregon	41.4	46.0	10.0
Indiana	52.4	59.6	12.1	Pennsylvania	52.0	67.6	23.1
Iowa	47.6	51.4	7.4	Rhode Island	50.6	63.8	20.7
Kansas	49.6	53.2	6.8	South Carolina	79.6	87.0	8.5
Kentucky	61.6	66.8	7.8	South Dakota	52.8	*	*
Louisiana	69.2	72.2	4.2	Tennessee	67.2	74.0	9.2
Maine	65.8	72.2	8.9	Texas	73.0	*	*
Maryland	65.8	77.0	14.5	Utah	48.0	54.0	11.1
Massachusetts	47.6	58.8	19.0	Vermont	52.6	63.8	17.6
Michigan	50.0	61.8	19.1	Virginia	71.2	75.0	5.1
Minnesota	45.0	51.0	11.8	Washington	42.4	47.8	11.3
Mississippi	60.0	64.8	7.4	West Virginia	65.8	76.2	13.6
Missouri	58.0	61.4	5.5	Wisconsin	47.0	56.0	16.1
Montana	54.4	58.8	7.5	Wyoming	54.6	66.2	17.5

†Rate for 1928–1932 relates to Expanding Birth Registration Area; rate for 1933–1937 to Continental United States.

‡Average for the period 1929–1932.

*Data not available.

Need for Earlier Registration for Prenatal Care

DESPITE the effort made in recent years to educate the public regarding the need of early registration for prenatal care, one half of the women receiving such care from the Visiting Nurses of the Metropolitan Life Insurance Company put off registration until the last trimester of their pregnancy. While registration at any date prior to confinement is of some assistance, the need for early supervision is well recognized. For example, it is generally agreed that the safeguard against albuminuria and eclampsia, the second most frequent cause of puerperal deaths, lies in prevention, which depends upon the early detection and the prompt and energetic treatment of the toxemia

as soon as it shows itself. It is also recognized that other hazards of pregnancy and childbirth can be reduced by adequate prenatal supervision of the expectant mother by a qualified physician.

But, with all this emphasis on the need for early registration, the fact is that we have very little published data on the actual time of the expectant mother's registration for antepartum care. Accordingly, it has seemed worthwhile to present the experience of the Metropolitan Life Insurance Company with some 5,800 maternity cases nursed by the Visiting Nurses of the Company in four months of 1937.

In the group were 2,386 women (41.1 percent of the total) living in the Company's Metropolitan Territory, which comprises Greater New York, Long Island, and Westchester County, and 3,426 (58.9 percent) living in a Southern area composed of the States of Arkansas, Louisiana, Mississippi, Oklahoma, and Tennessee. As the chart on page 6 shows, the experience of the two groups was remarkably similar, with a slightly larger proportion of the women registering early in pregnancy in the Metropolitan than in the Southern area. As we shall see later, the white mothers in the group were largely responsible for the poorer record of the women in the five Southern States.

For the two Territories combined it was found that approximately one half of the first prenatal visits were made in the last trimester of pregnancy, approximately two fifths in the second trimester, and only slightly over one tenth in the first trimester. Examining the records month by month for the second and third trimesters, it was found that 9.2 percent of the women received their first antepartum visit in the fourth month, 12.9 percent in the fifth month, 16.2 percent in the sixth month, 18.4 percent in the seventh month, and 19.2 percent, or the largest proportion, in the eighth month. Finally as many as 12.1 percent received their first visit in the last or ninth month of pregnancy. Certainly these figures confirm the general impression that far too large a proportion of expectant mothers put off too long going under observation.

While the data for the Metropolitan Territory were not kept separately for the two races, we were able to study the results of the Southern group by color. Although the results cannot be considered conclusive because of the small sample, they are nevertheless of interest. It was found that the 847 colored women included in the Southern group registered earlier for prenatal care than the 2,579 white women living in the same area. That is, 15.2 percent of the colored women registered in the first trimester of pregnancy, 48.7 percent in the second trimester, and only 36.1 percent in the last trimester; while among the white women 9.9 percent registered in the first trimester, 34.5 percent in the second trimester, and 55.6 percent in the last trimester. Likewise, we found

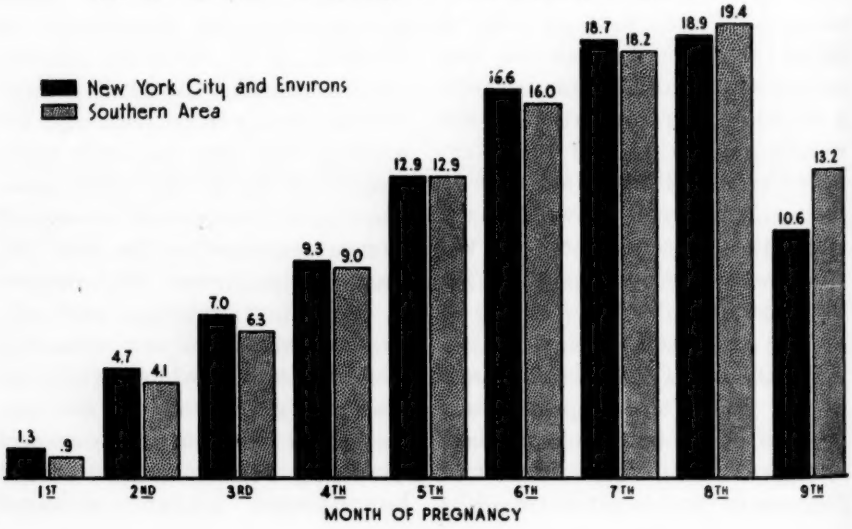
the fifth and sixth months to be the most common months of registration among the colored, as compared with the seventh and eighth among the white. Favorable as the colored experience appears in comparison to that of the white, it is still far from meeting the standard established as a minimum for adequate care.

In this connection it may be well to review the essentials of good care. They are stated by the Children's Bureau to be as follows: "First, a careful history, medical, surgical, gynecological, and obstetric; second, a complete physical examination, including the examination of heart, lungs, and abdomen; third, pelvic measurements, both internal and external; fourth, the taking of blood for a Wassermann reaction; fifth, minute instructions in the hygiene of pregnancy; and sixth, visits to a physician at least once a month during the first six months, then oftener as indicated. At each of the visits the patient's general condition must be investigated; blood pressure, urinalysis, pulse, and temperature recorded; weight of the patient taken, if possible; abdominal examination made; and the height of the fundus determined."

Thus we see that the course of antepartum treatment is well defined on the part of the doctor. But the first requisite—early registration—is entirely in the hands of the expectant mother, and until the public generally recognizes this fact we can not expect to secure the greatest possible benefits from prenatal care.

PRENATAL CARE

Percentage of mothers registered in specified months of pregnancy. Visiting Nurse Service, Metropolitan Life Insurance Company: 1937



Longevity of Industrial Policyholders in 1938

A NEW high point of 61.94 years for the expectation of life at birth for Industrial policyholders of the Metropolitan Life Insurance Company was reached in 1938 as a result of the unusually favorable mortality conditions prevailing during that year. By achieving this mark the group of insured wage-earners and their dependents have established a gain of 15.31 years in their expectation of life at birth since 1911-1912, the earliest period for which a corresponding life table was prepared. Thus, in 28 years, Industrial policyholders have increased their average length of life (expectation of life at birth) by practically one-third over the initial point, namely, 46.63 years in 1911-1912.

For nine successive years, beginning with 1930, there have been year-to-year gains in our series of annual data for the expectation of life at birth. Although the latest gain, namely, 1.23 years from 1937 to 1938, is not the greatest so far noted, it is exceeded only by the first gain in this series, namely, 1.58 years from 1929 to 1930. Table I shows the expectation of life at birth for Industrial policyholders for 1911-1912, 1919-1920, and each year from 1921 to 1938.

When a distinction by color and sex is made in our comparison of expectation of life in 1938 with that of 1937, it is found that, on the whole, the gain was somewhat greater among males than among females. For this comparison, the earliest age for which data are available is 5 years; the figures for 1938 are shown in Table II.* In 1938 at age 5 white males had an expectation of life of 59.62 years, an increase of 1.18 years since 1937. Compared to this, in 1938 white females had an expectation of life

*Comparable figures for 1937 are given in the STATISTICAL BULLETIN, June 1938, p. 4.

TABLE I

Expectation of Life at Birth. Weekly Premium-Paying Business, Industrial Department, 1911 to 1938. Metropolitan Life Insurance Company

CALENDAR YEAR	EXPECTATION IN YEARS	CALENDAR YEAR	EXPECTATION IN YEARS	CALENDAR YEAR	EXPECTATION IN YEARS
1938	61.94	1932	58.80	1925	55.51
1937	60.71	1931	57.90	1924	55.62
1936	60.31	1930	57.36	1923	54.55
1935	60.25	1929	55.78	1922	55.04
1934	59.45	1928	55.88	1921	55.08
1933	59.19	1927	56.42	1919–1920	51.14
		1926	55.02	1911–1912	46.63

Gain, 1938 since 1911–1912, 15.31 Years

of 63.77 years at age 5, a gain of 1.04 years since 1937. Corresponding gains for colored persons were 1.88 years in the case of males and .97 years in the case of females.

Colored persons continue to fall behind white persons in their expectation of life by a sizable margin. Among males at age 5 the expectation of life for the colored is 5.59 years below that for white persons. Among females the difference is even greater, namely, 7.96 years. However, these differences become smaller with advancing age and, at the high ages, seem to vanish completely.

A study of the last four columns of Table II shows that the disadvantage of colored persons as compared to white persons in respect to age — specific mortality rates is greatest in adolescence and early maturity. Between the ages of 15 and 35 years colored males have twice the mortality rates of white males, while colored females within the ages from 15 to 25 have practically three times the mortality of white females. From age 25 up to age 50 the mortality of colored women is at least twice that of white women. Although conditions of mortality and longevity over the years have improved among colored persons as well as among white persons, much more substantial gains must be made on the part of the colored if they are to enjoy a longevity similar to that of the white population.

On the whole, longevity among

TABLE II

Expectation of Life and Mortality Rate per 1,000, at Specified Ages, by Color and Sex. Weekly Premium-Paying Business, Industrial Department, 1938. Metropolitan Life Insurance Company

Age	Expectation of Life					Mortality Rate per 1,000				
	Total Persons	White Males	White Females	Colored Males	Colored Females	Total Persons	White Males	White Females	Colored Males	Colored Females
5	61.20	59.62	63.77	54.03	55.81	1.44	1.52	1.32	2.02	1.75
10	56.53	54.97	59.09	49.42	51.15	.86	.96	.69	1.23	1.09
15	51.80	50.26	54.30	44.84	46.59	1.29	1.36	.90	2.87	3.24
20	47.19	45.64	49.59	40.62	42.53	2.08	2.00	1.57	4.66	5.43
25	42.72	41.12	45.02	36.62	38.70	2.71	2.51	2.08	5.99	5.92
30	38.32	36.66	40.50	32.75	34.80	3.38	3.24	2.51	7.23	6.25
35	33.99	32.28	36.02	28.95	30.90	4.27	4.27	3.10	8.71	7.53
40	29.76	28.03	31.61	25.28	27.12	5.79	6.29	4.13	11.95	9.77
45	25.68	24.01	27.31	21.88	23.50	8.18	9.70	5.92	15.83	12.85
50	21.81	20.28	23.19	18.69	20.10	11.84	14.43	8.86	21.07	17.66
55	18.20	16.85	19.31	15.74	16.97	17.19	21.19	13.42	27.81	23.91
60	14.85	13.74	15.71	13.00	14.08	24.94	29.96	20.80	37.00	32.49
65	11.83	10.91	12.49	10.61	11.50	37.65	43.97	32.95	56.10	45.67
70	9.23	8.48	9.72	8.78	9.31	57.28	66.80	51.79	73.28	65.64
75	7.04	6.53	7.42	7.14	7.54	85.37	99.35	78.34	97.70	88.08

Industrial policyholders of the Metropolitan Life Insurance Company is gaining more rapidly than it is in the general population of the United States. In the period 1911-1912 the insured wage-earners had an expectation of life at birth 6.41 years less than that of the general population. By 1937, the latest year for which comparable data are available, the margin was only .77 years. In the course of time it may be expected to disappear entirely.

Our World's Fairs Exhibits

THE Metropolitan Life Insurance Company cordially invites readers of the STATISTICAL BULLETIN to attend its exhibits in the Business Systems and Insurance Building, New York World's Fair, and in the Hall of Science, Golden Gate International Exposition, San Francisco, Calif.

Health Record for May 1939

THE five-month period, January to May 1939, has experienced next to the lowest mortality rate, for this particular season of the year, in the history of the millions of men, women, and children who are industrial policyholders of the Metropolitan Life Insurance Company. Only the year 1938, for the corresponding period, made a slightly better showing. Similarly, the month of May itself has recorded next to the lowest death rate ever registered for this particular month.

Reports from several sections of the United States, relating to the population in general, also indicate that, although 1939 is not destined to be the best health year in the country's history, it will be one of the best. For example, in 88 major cities, deaths during the first 23 weeks of this year exceeded by less than 4 percent those in the similar part of 1938—and 1938, it must be borne in mind, was the record year for low mortality in the United States. Despite the slight increase in deaths from all causes, there was a drop in infant mortality in these cities. In particular, New York City, while showing a rise of 3.7 percent in its death rate during these same weeks, as compared with last year's unprecedentedly low figure, registered a sizable drop in both infant and maternal mortality.

Nineteen hundred and thirty-eight was a year of "best records" among this insured group for nine individual causes of death; and this year, to date, eight of these causes (scarlet fever, diphtheria, pneumonia, tuberculosis, diarrheal diseases, appendicitis, chronic nephritis, and puerperal conditions) show still further improvement.

Tuberculosis, which for the first time in the history of both the general population and the insured wage-earning group, registered in 1938 a mortality rate of less than 50 per 100,000, recorded a further drop of more than 4 percent for 1939 up to the end of May. It is thus practically assured that the long series of year-to-year decreases in the mortality from this disease will be still further extended. A drop of 9.4 percent since last year in the cumulative rate from diseases of pregnancy and childbirth makes it a practical certainty that the final figure for the year will be less than one half that recorded at the beginning of the current decade. A 5 percent decline in the mortality rate for pneumonia has occurred this year as compared with last year. This is the more gratifying in view of the fact that the death rate from influenza is actually 59 percent in excess of last year's figure, and that, commonly, a high death rate from influenza has been accompanied with a high rate from pneumonia. It is true that the influenza which has prevailed this year has not been generally of the virulent type that so often terminates in pneumonia. Nevertheless, a contributing factor in reducing the death rate from pneumonia has undoubtedly been the modern serum treatment.

In the field of deaths from violent causes there have been drops in suicides, all forms of accidents combined, and automobile fatalities as compared with 1938.

More than counterbalancing these improvements, however, are considerable increases in deaths from influenza and from the principal chronic diseases, namely, cancer, diabetes, cerebral hemorrhage, heart conditions, and diseases of the coronary arteries.

Excellent health conditions prevailed in May throughout the general population of the United States. Among the communicable diseases, only influenza and poliomyelitis were more prevalent than in May of last year, and cases of the former numbered less than one third those reported in the preceding month of April. Although measles, typhoid fever, and whooping cough increased slightly in incidence, as compared with April, these diseases were by no means as prevalent as in May a year ago. Cases of diphtheria, scarlet fever, and smallpox were less numerous than in either April of this year or in May a year ago.

The following table shows the mortality among Industrial policyholders for May 1939, April 1939, and May 1938, together with the death rates for the first five months of each year.

METROPOLITAN LIFE INSURANCE COMPANY

Death Rate per 100,000 for Principal Causes. Weekly Premium-Paying Business in Industrial Department. All Ages (Annual Basis).*

MONTHS OF MAY 1939, APRIL 1939, AND MAY 1938

CAUSES OF DEATH	ANNUAL RATE PER 100,000 LIVES EXPOSED*				
	May 1939	April 1939	May 1938	Cumulative January-May 1939	Cumulative January-May 1938
TOTAL—ALL CAUSES	814.5	842.3	777.5	857.4	828.4
Typhoid fever	.5	.5	.6	.4	.7
Measles	.6	1.1	3.1	.9	3.2
Scarlet fever	.8	.9	1.3	1.1	1.9
Whooping cough	1.7	1.5	2.3	2.0	2.1
Diphtheria	.8	.8	1.6	1.3	1.9
Influenza	11.6	20.2	6.4	17.5	11.0
Pneumonia (all forms)	44.5	59.5	52.3	67.9	71.5
Tuberculosis (all forms)	46.3	47.9	52.5	47.3	49.3
Tuberculosis of respiratory system	41.2	42.5	45.5	42.3	44.3
Syphilis, locomotor ataxia, and general paralysis of the insane	10.7	12.1	10.1	11.5	11.6
Cancer (all forms)	94.8	99.6	95.0	100.0	94.4
Diabetes mellitus	29.6	26.7	25.2	29.4	26.2
Cerebral hemorrhage; apoplexy	60.3	65.8	56.2	64.8	61.7
Diseases of the heart†	174.0	169.3	154.9	178.6	164.4
Diseases of the coronary arteries	42.5	42.8	34.4	43.3	34.9
Angina pectoris	7.0	5.9	5.7	7.3	7.2
Diarrhea and enteritis	3.8	4.0	5.2	4.5	5.5
Appendicitis	10.1	10.5	10.0	9.8	10.2
Chronic nephritis (Bright's disease)	52.8	53.0	54.5	56.2	56.4
Puerperal state—total	6.4	6.6	6.6	5.8	6.4
Suicides	8.8	8.9	8.5	8.5	8.6
Homicides	4.2	4.6	3.4	4.3	4.3
Accidents—total	44.9	41.2	42.7	43.8	45.1
Automobile accidents	14.9	14.6	14.6	15.9	16.5
All other diseases and conditions	157.8	158.8	144.8	151.1	150.0

*The rates for 1939 are subject to slight correction, since they are based on provisional estimates of lives exposed to risk.

†Excludes pericarditis, acute endocarditis, acute myocarditis, coronary artery diseases, and angina pectoris.

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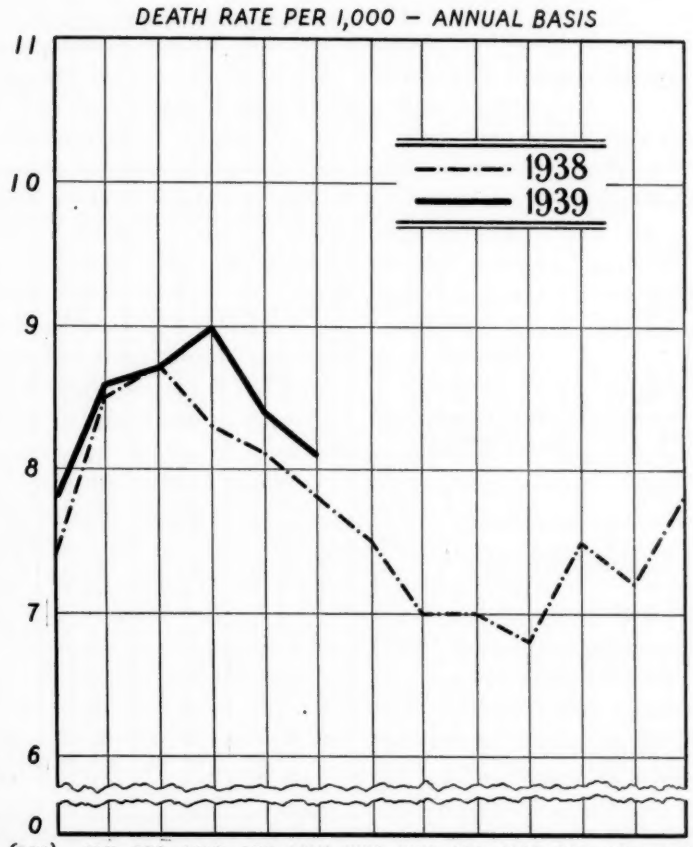
DEATH RATES FROM ALL CAUSES

METROPOLITAN LIFE INSURANCE COMPANY
INDUSTRIAL DEPARTMENT
WEEKLY PREMIUM-PAYING BUSINESS – TOTAL PERSONS



*Rates are provisional

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